

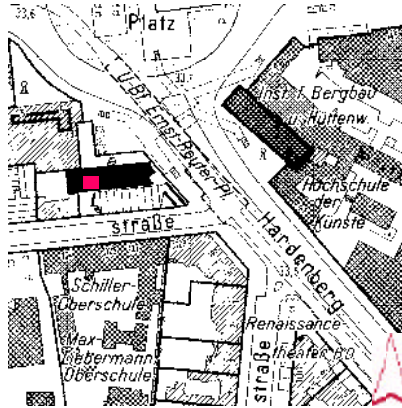
Berlin, Germany

predominantly cloudy

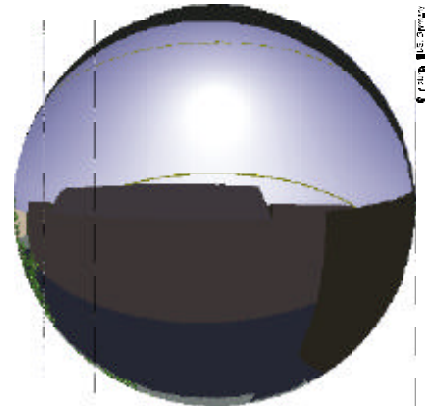
**integrated facade design concept
using louver blinds and lightshelves**



Built in 1962, the floor plan of the IBM-Building was designed to allow a variety of office layouts such as cellular offices, group offices, open plan offices, or even combi-office concepts. Most floors however were generally equipped with cellular offices.



While the southern facade is oriented to a street, the northern facade faces a large scale public space.



Fisheye picture showing the obstruction of the room recorded in the 5th floor.



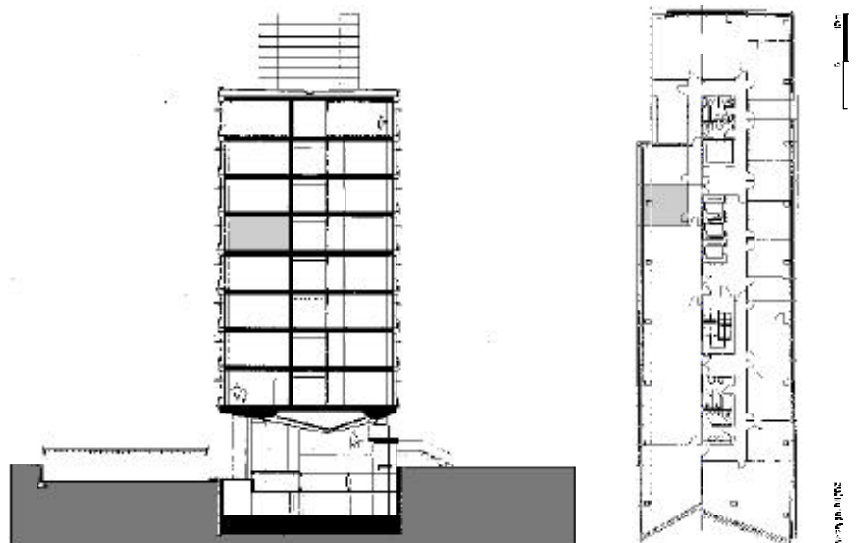
The installation of a short exterior lightsheff, that originally extended into the office (the interior part was omitted when retrofitting the facade), divides the window into two segments. While it is unclear whether they effectively capture skylight, they proved to be too short to provide efficient shading. Additional recessed and manually controlled louver blinds help to shade and protect from glare. The spandrels are shaped to maximize the exposure of the upper window to the sky. Interior vertical blinds were added to further protect the user from glare. Unfortunately all of these systems harm the function of the lightsheff to redirect daylight. The north and the south facade show similar systems.



View from north. North and south facades of the IBM-building are constructed similar, the facades have been retrofitted.



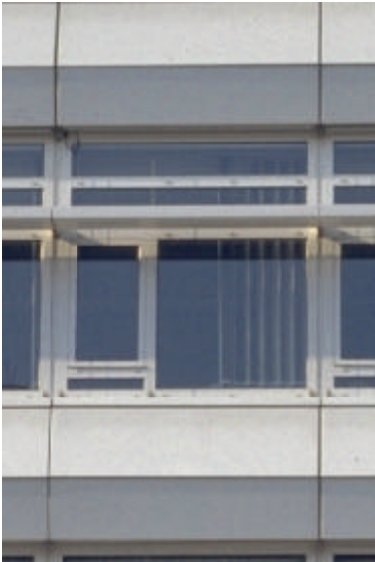
The recorded cellular office only measures 4,84 m in depth, but with respect to the variability of the floor layout, the facade has been designed to illuminate deeper spaces as well. The heating and wiring is placed below the window sill. To allow offices to be naturally ventilated, the window is divided into four segments, one of which is operable.



Left side: cross-section of the IBM-building, right side: 5th floor of the IBM-building, the floor layout allows to realize different office concepts, cellular offices as well as open plan offices or group offices. Most of the stories are divided into cellular offices. The construction is a wide spanned skeleton structure.



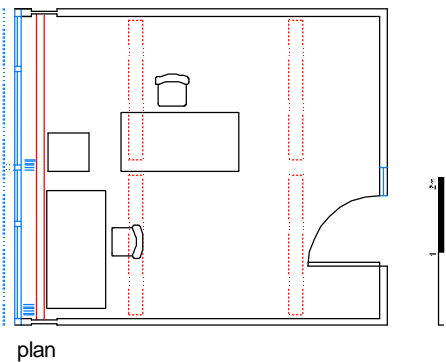
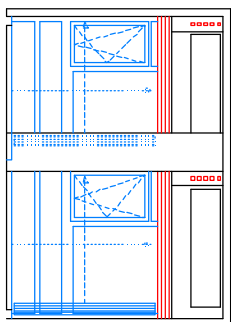
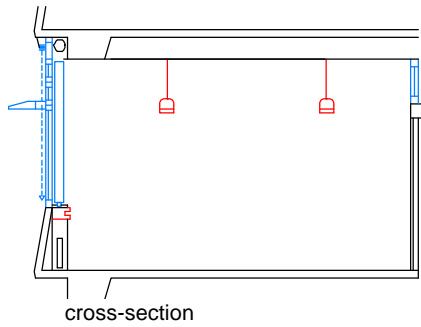
Interior view from the rear wall to the window of one typical office in the IBM-building, a large column which is detached from the facade diminishes the quality of the space.



Exterior view of the facade showing the lightshelf and the peaked spandrel.



Interior view of the window-system.



buildingdata

size 7065 m²
 number of stories 9
 architect Gutbrot, Binde r
 year of completion 1962

office room

daylight strategy unilateral, sidelighting
 dimensions (depth/width/height) 4,8 m / 4,1m / 2,9 m
 room area 20 m²
 floor carpet, 16 %
 wall plasterboard, 53 %
 door timber, 26 %
 ceiling white panels, 68 %
 table timber veneer, 24 %
 south facing window double clear glazing
 corridor facing window wired glass
 lamp types fluorescent lamps
 installed power density 12 W/m²
 control strategy manual switching

| facade | | south facade | east wall (north) |
|------------------|------------------|--------------------|--------------------|
| data | orientation | 180° | 0° |
| | glazed area | 6,6 m ² | 3,2 m ² |
| | opening index | 0,55 | 0,27 |
| function | daylighting | ● | - |
| | view outside | ● | - |
| | ventilation | ● | - |
| | operable | ● | - |
| | shading | ● | - |
| | redirection | ● | - |
| | | | |
| function systems | | lightshelf | lower blinds |
| function | sun shading | ■ | - |
| | glare protection | ■ | ● |
| | redirection | ■ | - |
| location | inside | ■ | ● |
| | window pane | ■ | - |
| | outside | ■ | - |
| | movable | - | ● |
| | | fixed | - |